

A REPORT ON A COLLECTION OF HYMENOPTERA (MOSTLY FROM CALIFORNIA) MADE BY W. M. GIFFARD.

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The following paper, which is a contribution from the Branch of Forest Insects, is a report on a collection of Hymenoptera (mostly from California) which had been assembled by W. M. Giffard and received for determination through Dr. L. O. Howard. The types of all of the new species and specimens of most of the species recorded have been presented to the United States National Museum.

Considering the careful way in which Mr. Giffard has collected, it is not surprising that a number of the species proved to be new. In some of the groups the collection offered some especially interesting species which although distinct from any described species are closely allied and serve to indicate progressive modification of specific characters. Especially is this true in *Crabro* s. 1.

Unless otherwise specified, all the specimens were collected by W. M. Giffard.

Suborder CHALASTOGASTRA.

Family ARGIDAE.

ARGE, species.

A species allied to *clavicornis* (Fabricius) from Eldorado County, California, 8,400 feet, June, 1909, is represented by a single female.

Family TENTHREDINIDAE.

TENTHREDELLA VARIATA (Norton).

A single male from Eldorado County, California, 8,400 feet, collected June, 1909.

STRONGYLOGASTER PACIFICA MacGillivray.

This species is represented by one female and seven males collected in Eldorado County, California, June, 1909, at an altitude of 8,400 feet.

CRATEROCERUS CALIFORNICUS, new species.

Of the described species this new species is more closely allied to *fraternalis* (Norton), but is easily distinguished from that species by size, black prescutum, etc.

Female.—Length, 6 mm. Clypeus convex, deeply, arcuately emarginate apically, the lobes rather narrow, rounded apically; supraclypeal foveae rather small, deep; supraclypeal area flat; median fovea deep, U-shaped, slightly breaking through crest; antennal foveae large, breaking through crest; pentagonal area poorly defined, trapezoidal; postocellar area, well defined on all sides, about four times as wide as the cephal-caudad length; head shining; third antennal joint a trifle shorter than the fourth; thorax shining; stigma broadest near base, tapering to apex; transverse radius received slightly basad of middle of cell; third cubital cell distinctly shorter than the second; sheath stout, strongly oblique below, rounded apically. Black; angles of pronotum and tegulae yellowish; sternites and legs below coxae piceous, paler at knees. Wings hyaline; venation dark brown, costa and stigma paler.

Type-locality.—Eldorado County, California. Described from two females collected by W. M. Giffard, June, 1909, at an altitude of 8,400 feet.

Type.—Cat. No. 19884, U.S.N.M.

Paratype in collection of Mr. Giffard.

Suborder CLISTOGRASTER.

Superfamily VESPOIDEA.

The superfamily Vespoidea is here restricted to the old Diptoptera and is easily distinguished from the other groups placed in Vespoidea by Ashmead in having the posterior margin of the pronotum above and behind the anterior margin of the tegulae.

Family MASARIDAE.

PSEUDOMASARIS ALBIFRONS Rohwer.

Two males collected by A. Koebele at Tucson, Arizona, June, 1900, have the femora somewhat darker than in the type.

Family EUMENIDAE.

SYNOMORPHUS DEBILIS Saussure.

Two males from Tahoe, Eldorado County, collected June, 1909, at an altitude of 6,200 feet.

These specimens differ slightly from eastern specimens in having the dorsal aspect of the first tergite coarsely punctured, thus agreeing better with Saussure's description.

ANCISTROCERUS SEXCINGULATUS Ashmead.

Three males from Tahoe, Eldorado County, collected June, 1909, at an altitude of 6,200 feet; one male from Summit, Placer County, July, 1907.

In one specimen from Tahoe there are two small spots on the scutellum, and in the specimen from Summit these spots are present and larger.

ANCISTROCERUS SUTTERIANUS Saussure.

One male from Alameda County, collected July, 1907.

ANCISTROCERUS TAHOENSIS, new species.

This species belongs to Saussure's Group II B, p. 180, "Synopsis of American Wasps," and judging from the description must resemble *paridesi* Saussure in structure, but the abdomen is not conical and the color is quite different.

Female.—Length to apex of second tergite 8 mm. Clypeus with its length and width subequal, surface punctured to irregularly striate, the apical margin truncate; front with close almost confluent punctures; vertex more sparsely punctured, not tuberculate; angles of the pronotum prominent but not tuberculate; propodeum reticulate dorsally, finely striate posteriorly; thorax punctured like the front; first tergite transverse, almost as wide as second; second tergite twice as long as the first and not at all reflexed; first two tergites with a few small scattered punctures; somewhat obscured by the appressed pubescence. Black; clypeus except margin and a rather large median basal spot, a spot between the antennae, scape beneath, dot behind the summit of eyes, anterior margin of the pronotum, tegulae, spot beneath, two spots on the scutellum, two spots on the metanotum, apical margin of the abdominal segments (slightly broader laterally), an elongate free spot on second tergite, and legs below the knee, yellow; head and thorax with long gray hair; wings subhyaline, the apical margin dusky, basal anterior margin yellowish; costa and stigma yellow, the rest of the venation brown.

Type-locality.—Tahoe, Eldorado County, California. Described from a single female collected at an altitude of 6,200 feet, in June, 1909, by W. M. Giffard.

Type.—Cat. No. 20330, U.S.N.M.

ANCISTROCERUS LUCIDUS, new species.

This small slender species is allied to *sexcingulatus* Ashmead, but may be readily separated from Ashmead's species by the sparse punctures on the front (in *sexcingulatus* the front is closely, almost confluent punctured).

Male.—Length to apex of second abdominal segment 5 mm. Clypeus distinctly broader than long, convex, smooth, the apical margin deeply arcuately emarginate; supraclypeal area with a distinct median carina; front shining with sparse well-defined punctures; vertex not tuberculate; thorax punctured similarly to the front; the anterior margin of the pronotum carinate, the lateral angles prominent but not tuberculate; depression in front of the scutellum foveolate; propodeum reticulate dorsally; posterior face reticulate or striate; first tergite with large well-defined punctures, the second not quite twice as long and almost impunctate. Black; clypeus, spot on the mandibles, spot between the antennae, scape beneath, dot at the summit of the eyes, two spots on the pronotum, the metanotum, apical margins of the first and second tergites, tibiae, intermediate femora beneath at the apex, and the four anterior tarsi, *yellow*, flagellum brownish beneath; wings dusky hyaline; venation dark brown.

Type-locality.—Tahoe, Eldorado County, California. Described from four males collected at an altitude of 6,200 feet, in June, 1909, by W. M. Giffard.

Type and paratype.—Cat. No. 20331, U.S.N.M.

Paratypes in Mr. Giffard's collection.

ODYNERUS TRUNCATUS Provancher.

Seven males from Tahoe, Eldorado County, collected June, 1909, at an altitude of 6,200 feet.

ODYNERUS ELANDINUS, new species.

Related to *blandus* Saussure, but judging from the original description the punctuation of the abdomen in *blandus* is much stronger.

Female.—Length to apex of the second tergite, 9.5 mm. Clypeus with the length and width subequal, convex, and with sparse, well-defined punctures, the apical margin nearly truncate; supraclypeal area with a well-defined median carina; front with close, sometimes confluent punctures; vertex sparsely punctured, not tuberculate; anterior margin of the pronotum strongly carinate, the angles prominent; thorax with distinct, well-defined or confluent punctures; dorsal aspect of the propodeum punctato-reticulate, the posterior face irregularly striate and without well-defined inclosing carinae; abdomen opaque, the first segment almost impunctate, the apical margins of the second, third, fourth, and fifth tergites with closed punctures, but not at all reflex. Black; clypeus except margin and a median spot, a spot between the antennae, scape beneath, dot at summit of the eyes, anterior margin of the pronotum, tegulae, spot beneath, two spots on the scutellum. metanotum, sides of the propo-

deum, apical margins of the first and following tergites, lateral margins of the first and second tergites connected with the triangular-shaped spot, second and following sternites yellow; legs yellow; coxae above, trochanters, femora above and also beneath at base, black; tarsi ferruginous; head and thorax with short brownish hair; wings yellowish hyaline, the apical margin slightly dusky; costa and stigma yellowish, the apical venation brown.

Male.—Length to apex of the second tergite 9 mm. The male agrees very well with the female in color and structure. The clypeus is entirely yellow.

Type-locality.—Tahoe, Eldorado County, California. Described from one female and four males collected at an altitude of 6,200 feet, in June, 1909, by W. M. Giffard.

Type.—Cat. No. 20332, U.S.N.M.

Two paratypes in collection of Mr. Giffard.

Specimens which are probably this species are also collected at Summit, in Placer County, California. These specimen and a few other specimens from Eldorado County which are not considered as types indicate that this species will vary considerably in the markings of the scutellum and propodeum; most of the males have the scutellum and propodeum black; the marking of the second tergite varies somewhat, as the median yellow spots are much reduced in size in certain specimens from Summit.

ODYNERUS GIFFARDI, new species.

This species would fall near *blandus* in Saussure's Synopsis, but is easily separated from that species on the puncturation of the abdomen, and from the species described above by the yellow spot on the mesoscutum.

Female.—Length to apex of the second tergite, 7 mm. Clypeus longer than wide, irregularly striate, the apical margin truncate; front confluent punctured; vertex not tuberculate; thorax with distinct well-defined punctures, laterally bipunctate; propodeum reticulate above, posterior face striate, without defining carinae; first tergite about half as long as second, with distinct, scattered punctures; the second tergite with only setigerous punctures basally and with a few punctures apically, the apical margin not reflex. Black; clypeus except a median spot and the lateral and anterior margins, spot between the antennae, the inner margins of the eyes to the emargination, scape beneath, spot at the summit of the eyes, two spots on the pronotum, tegulae, a large spot beneath, a small dot in front of the scutellum, metanotum, large spots on the sides of the propodeum, apical margin of all the tergites, triangular-shaped lateral spots on the first and second tergites which are confluent with

the yellow lateral margin, the apical margin of the second and following sternites, basal lateral spot on the second sternite, yellow; legs black; femora beyond the middle, tibiae and the first joint of the tarsi yellow; the apical joints of the tarsi ferruginous; head with very short brownish hair; wings dusky hyaline, costa and stigma and the rest of the venation brownish.

Type-locality.—Alameda County, California. Described from five females collected July, 1907, by W. M. Giffard, for whom this species is named.

Type.—Cat. No. 20333, U.S.N.M.

Two paratypes in Mr. Giffard's collection.

A specimen from the foothills near Santa Barbara, California, collected in August, 1908, probably belongs to this species but the coxae are yellowish beneath and almost the entire second sternite is yellow.

ODYNERUS ROBUSTUS, new species.

Female.—Length to apex of the second tergite, 12 mm.; robust. Clypeus with length and width subequal, irregularly striate medianly, punctured laterally, the apical margin nearly truncate; supra-clypeal area not carinate; front closely punctured; in the area adjoining the ocelli the punctures are larger and sometimes confluent; vertex more sparsely punctured, not tuberculate; anterior margin of the pronotum feebly carinate; thorax punctured similarly to the front; metanotum and dorsal surface of the propodeum coarsely reticulate; posterior face finely striate, without bounding carina; apical margin of the second tergite with large punctures, but not reflexed; apical margin of the third, fourth, and fifth tergites punctured. Black; clypeus except the lateral margin and an elongate median spot, the inner margin of the eyes to the emargination, a spot between the antennae, scape beneath, posterior margin of the eye, line on the pronotum, tegulae, a spot beneath, two small spots on the scutellum, two spots on the propodeum, apical margin of the first and following tergites, lateral median triangular spots on the first and second tergites, apical margin of the second and following sternites, broader laterally, spot on the coxae beneath, four anterior femora beneath apically, and tibiae, yellowish; tarsi ferruginous; head and thorax with dense brownish hair; wings yellowish hyaline, the apical margin dusky; venation the color of the wings.

Type-locality.—Tahoe, Eldorado County, California. Described from one female collected at an altitude of 6,200 feet, in June, 1909, by W. M. Giffard.

Type.—Cat. No. 20334, U.S.N.M.

ODYNERUS ELDORADENSIS, new species.

If it were not for the color markings, this might be the male of *robustus*, but it differs from that species as follows: Clypeus yellow,

the apical margin arcuately emarginate; scutellum, propodeum, and mesepisternum black; tergites with only the apical margin pale; tegulae almost entirely brownish. Length to apex of second tergite, 10 mm.

Type-locality.—Tahoe, Eldorado County, California. Described from one male collected at an altitude of 6,200 feet by W. M. Giffard.

Type.—Cat. No. 20335, U.S.N.M.

PTEROCHILUS MORRISONI Cresson.

One male from Tahoe, Eldorado County, collected June, 1909, at an altitude of 6,200 feet.

Superfamily MUTILLOIDEA.

The superfamily Mutilloidea as used here is that portion of the Fossores of Cresson in which the pronotum is large, well developed laterally, and extends back at least as far as the anterior margin of the tegulae and does not form a tubercule. The group is easily separated from the true Vespoidea by the character mentioned under that superfamily. In the writer's opinion, the superfamily Vespoidea as defined by Ashmead is composed of a number of homogeneous groups, which it will be desirable to call superfamilies. The name Mutilloidea is used in preference to Scolioidea, which was introduced by Banks in 1912, because *Mutilla* is the older genus.

Family MUTILLIDAE.

DASYMUTILLA AUREOLA (Blake).

A single female collected by Blaisdell, July, 1910, in Calaveras County, California.

Family PSAMMOCHARIDAE.

PSEUDAGENIA METALLICA Banks.

A female from Alameda County, California, July, 1907.

PEPSIS FORMOSA (Say).

Two of each sex collected by Blaisdell in Calaveras County, California, July, 1910.

PSAMMOCHARES, species.

A single female from San Francisco, California, July, 1907, does not seem to be described.

PSAMMOCHARES AETHIOPS (Cresson).

A male from Alameda County, California, July, 1907.

PSAMMOCHARES LUCTUOSUS (Cresson).

One female and two males from Tahoe, Eldorado County, California, June, 1909.

APORINELLUS CALIFORNICUS, new species.

This species appears to be more closely allied to *Aporinellus ferrugineipes* (Viereck), but does not agree with the description of that species, being easily differentiated by the red four anterior legs, relationship of antennal joints, and arcuation of the pronotum.

Female.—Length, 6 mm. Anterior margin of clypeus truncate; malar space very narrow; inner margin of eye broadly arcuately marginate about the middle; ocelli in a low triangle; postocellar line one-fifth longer than the ocellocellar line; antennae slightly tapering, third and fourth joints subequal; head shining; pronotum shallowly arcuately emarginate posteriorly; entire thorax shining; dorsal aspect of propodeum with a distinct median furrow; longer calcaria of both the intermediate and posterior tibiae distinctly more than half as long as basitarsus, that on the intermediate tibiae slightly longer in proportion than the one on posterior tibiae; radial cell very short; second cubital cell trapezoidal in outline; second recurrent nearly interstitial with second transverse cubitus; the first recurrent one-third of the length of the cell from the first transverse cubitus; nervulus slightly antefurcal; abdomen shining. Black with very little pubescence; mandibles except apices, anterior margin of clypeus, all of the femora and tibiae, and basal part of all of the basitarsi rufus; wings hyaline; venation pale brown.

Type-locality.—Alameda County, California. Described from one female collected July, 1907, by W. M. Giffard.

Type.—Cat. No. 19967, U.S.N.M.

Superfamily SPHECOIDEA.**Family SPHECIDAE.****CHLORION CYANEUM Dahlbom.**

Two females from Ohio or Texas.

PALMODES LAEVIVENTRIS (Cresson).

One male from the foothills of Santa Barbara County, California, August, 1907.

AMMOBIA PENNSYLVANICA (Linnaeus).

Two males from Ohio or Texas.

AMMOBIA ICHNEUMONEA (Linnaeus).

One female and one male from Ohio or Texas; one of each sex from San Rafael, California, August, 1909; one male from Calaveras County, California, July, 1910, collected by Blaisdell.

SCELIPHRON SERVILLII Lepeletier.

A specimen of each sex from the foothills of Santa Barbara County, California, August, 1907.

PSAMMOPHILA LUCTUOSA Smith.

Three females from Tahoe, Eldorado County, California, 6,200 feet, June, 1909; one female from Alameda, California, July, 1907; one female from Summit, Placer County, California, 7,000 feet, July, 1907.

PSAMMOPHILA VIOLACEIPENNIS Lepeletier.

Two females from Tahoe, Eldorado County, California, 6,200 feet, June, 1900; and one male from Alameda, California, July, 1907.

SPIHEX SAEVA (Smith).

One female collected by Blaisdell in Calaveras County, California, July, 1910.

SPHEX VULGARIS (Cresson).

Three of each sex from Tahoe, Eldorado County, California, 6,200 feet, June, 1909.

OXYBELUS, species.

A single female specimen from the coast of Santa Barbara collected June, 1907, appears to represent a new form, but more material is needed.

OXYBELUS QUADRINOTATUS Say.

Two females and four males from San Francisco, July, 1907; two males from the Santa Barbara coast June, 1907; two females and two males from Alameda County, July, 1907. These specimens are rather larger than the eastern form, and have the abdomen more closely punctured.

LINDENIUS COLUMBIANUS Kohl.

Two females and 12 males from Santa Barbara, California, July, 1907.

These specimens agree very well with Kohl's description, but it is impossible to make the comparison with *pygmaeus*. This species is easily distinguished from *errans* Fox by the more closely punctured scutum and by the unusually prominent lateral ridges of the scutum.

Genus SOLENIUS Lepeletier.

Subgenus HYPOCRABRO Ashmead.

Syn.: *Pseudocrabro* ASHMEAD.

Xylocrabro ASHMEAD.

The groups for which *Hypocrabro* and *Pseudocrabro* were proposed can not be separated in the female (Ashmead's separation was

based entirely on the types, and according to his characters the female of *packardii* would be a *Pseudocrabro*, while the male would be a *Hypocrabro*, so it is evident they must not be considered as distinct. *Xylocrabro* Ashmead (= group *scaber* Fox) is in habitus rather different from *Hypocrabro* and can be well differentiated in most species by the presence of a foveolate channel on lateral posterior angle of the propodeum, coarser sculpture, and absence of a fringe at the side of the pygidium. In certain species, however (such as *banksi* Rohwer), there is intergrading (*banksi* has habitus and punctuation of *Xylocrabro* and other characters of *Hypocrabro*), so it is difficult to satisfactorily separate the two groups. For this reason the above synonymy is preferred.

SOLENIUS (HYPOCRABRO) IMBUTUS (Fox).

Crabro imbutus Fox, Proc. California Acad., ser. 2, vol. 4, 1894, p. 108.

Crabro (*Solenius* Lepeletier) *ferrugineipes* ROHWER, Ent. News, vol. 19, 1908, p. 250.

From material in the United States National Museum it is evident that *ferrugineipes* Rohwer is only a color form of *imbutus* Fox, in which the sternites are black, the spot on the first tergite is wanting, and the spots on the second tergite are much reduced.

SOLENIUS (HYPOCRABRO) NOKONIS (Rohwer).

Crabro (subg. ?) *nokonis* ROHWER, Ent. News, 1908, vol. 19, p. 251.

This species is very close to *chrysarginus*, but may be distinguished, as far as the material in the United States National Museum goes, by the black metanotum and prepectus.

SOLENIUS (HYPOCRABRO) GIFFARDI, new species.

The female of this species runs in Fox's synopsis to *packardii* Cresson, to which it is very closely allied, but it may be differentiated from *packardii* by the richer livery, the shorter first flagellar joint, and the less strongly ridged pronotum. The male runs to copulet 25 and differs from *imbutus* in markings and sculpture and from *odynecroides* by the marks on the sternites and shorter first joint of the median tarsus.

Female.—Length 11.5 mm. Clypeus with low median projection, the lateral angles of which are round; distance between the eyes at the clypeus about one-fifth greater than the median length of the clypeus; frons very closely punctured, almost granular; vertex and posterior orbits with the punctuation more distinct; ocelli in very low triangle; postocellar line about one-eighth shorter than the ocellocular line; first joint of flagellum one-fifth longer than the second; pronotum not strongly ridged and without a lateral tooth; mesonotum closely punctato-granular, posteriorly the punctures are

more distinct; scutellum with close irregular punctures; mesepisternum striato-punctate; episternal groove scarcely foveolate; propodeum with a distinct median channel, dorsally striato-punctate, posteriorly obscurely reticulate, laterally finely rugulose; abdomen shining; the first tergite with punctures a trifle larger and more separate than any of the following; venation, legs and pygidium typical of group. Black; mandibles except apically, two obscure small spots on the clypeus, scape, pedicellum, two large spots on pronotum (almost contiguous), tubercles mesepisternum anteriorly, scutellum, two small spots before the scutellum, a line on metanotum, a broad band on all of tergites near anterior margin (interrupted narrowly on third), second sternite medianly, third sternite laterally, and sixth sternite medianly bright *yellow*; legs yellow, coxae, trochanters, and femora above (posterior femore beneath), and apical four joints of hind tarsi black; wings dusky hyaline; venation pale brown; with the usual short pressed silvery pubescence; the head, thorax and first tergite with rather long slightly yellowish hair.

Male.—Length 10 mm. First joint of flagellum one-fifth longer than second; mesoscutum and propodeum more distinctly punctured than in the female; differs from the female in having most of the four posterior femora black.

Type-locality.—Alameda County, California. Described from three females (one type) and two males (one allotype), collected in July, 1907, by W. M. Giffard, for whom the species is named.

Type.—Cat. No. 20156, U.S.N.M.

A male and female paratype in Mr. Giffard's collection.

SOLENIUS SEPTENTRIONALIS (Packard).

A male and female from Summit, Placer County, California, collected July 1907 at an altitude of 7,000 feet.

BELEPHARIPUS ATER (Cresson).

A single female from Tahoe, Eldorado County, California, 6,200 feet, June 1909.

CRAERO LATIPES Smith.

Five males from Summit, Placer County, California, 7,000 feet. July 1907.

CRAERO LARGIOR Fox.

One female from Tahoe, Eldorado County, collected June 1909 at an altitude of 6,200 feet.

CRAERO VICINUS Cresson.

Two females from Summit, Placer County, collected July 1907; and two females from Tahoe, Eldorado County, collected June 1909 at an altitude of 6,200 feet.

ANTHOPHILUS MULTIMACULATUS Cameron.

One female and six males from the Santa Barbara coast, June 1907.

ANTHOPHILUS PACIFICUS (Cresson).

Five males from Alameda County, California, July 1907; three males from the Santa Barbara coast, June 1907.

CERCERIS FINITIMA Cresson.

Thirty-one males from the coast and two from the foothills of Santa Barbara County, California. Specimens collected in June and August 1907.

CERCERIS CALIFORNICA Cresson.

One male from Calaveras County, California, collected July, 1910, by Blaisdell agrees fairly well with Cresson's description.

LARROPSIS TENUICORNIS (Smith).

A single male specimen from Alameda County, California, July, 1907, is not quite typical, as the striae on the propodeum curve anteriorly.

TACHYSPHEX TERMINATUS (Smith).

One female and three males from Alameda County, California, July, 1907; and one male from the foothills of Santa Barbara, California, collected August, 1907. No differences between these and New Jersey specimens were found.

TACHYSPHEX GIFFARDI, new species.

In Fox's Revision of the North American Larridae this species traces to *montanus* Cresson, but differs in clypeal characters, color, etc. From *tarsatus* Say, *hitei* Rohwer, and *semirufus* Cresson the punctuation will distinguish.

Female.—Length, 8 mm. Clypeus strongly convex, shining, with large separate punctures, the anterior margin subtruncate, the lateral angles not or but slightly produced; frons opaque, granular with distinct separate punctures in addition; above the anterior ocellus the granulation is much finer and the punctures closer and better defined; the superior interocular line much more than half the inferior interocular line, greater than the length of antennal joints two plus three but less than three plus four; antennae scarcely tapering, the third and fourth joints subequal; scutum and scutellum shining, with distinct scattered punctures which are closer and finer on the scutum anteriorly; dorsal aspect of the propodeum coarsely granular; mesoplurae and sides of propodeum coriaceous; posterior face of the propodeum transversely striated, the dorsal stria being more promi-

nent; the first two abscissae of radius subequal, the third a trifle shorter; abdomen shining, without apparent sculpture; pygidium one and one-third times as long as basal (base of lateral carinae) width. Black, abdomen clear red; head and thorax with a small amount of silvery pile; wings dusky hyaline.

Type-locality.—Summit, Placer County, California. Described from six females collected in July, 1907, by W. M. Giffard, for whom the species is named.

Type.—Cat. No. 19927, U.S.N.M.

Two paratypes in Mr. Giffard's collection.

TACHYSPHEX ELDORADENSIS, new species.

In Fox's table this will go to *consimilis* Fox, but it is larger and the abdomen is all red. It is closely allied to *giffardi* Rohwer, but is larger and the mesoscutum is much more coarsely sculptured. *Eldoradensis* is most closely allied to *neomexicanus* Rohwer, but may be separated by the much longer pygidium.

Female.—Length 11 mm. Clypeus strongly convex, shining with large separate punctures, the anterior margin subtruncate (slightly wavy) the lateral angles not at all produced; frons coarsely coriaceous; intraocellar area with separate distinct punctures, the vertex similarly but more closely punctured; superior interocular line about half as long as the inferior, distinctly longer than the second and third antennal joints but markedly less than the third and fourth; antennae slightly tapering, the third joint one-fifth shorter than the fourth; mesoscutum punctured similar to vertex; scutellum shining more sparsely punctured, not impressed; dorsal aspect of propodeum coriaceous, the sides finely striato-granular, the posterior face distinctly transversely striate; the first and third abscissa of radius subequal, the second much shorter; abdomen shining, without apparent sculpture, the pygidium three times as long as basal (base of lateral carinae) width. Black; abdomen clear red; tarsi reddish; pubescence silvery; wings dusky hyaline.

Type-locality.—Tahoe, Eldorado County, California. One female collected at an altitude of 6,200 feet, June, 1909, by W. M. Giffard.

Type.—Cat. No. 19928, U.S.N.M.

TACHYSPHEX PLESIA, new species.

In Fox's synopsis this will fall in with *fumipennis*, but, judging from the description, it is not closely allied to that species.

Female.—Length 8 mm. Clypeus convex, shining, with distinct separate punctures; the anterior margin with a broad, low, depressed lobe which is gently rounded; frons coarsely punctato-reticulate; intraocellar area with separated punctures; vertex with scattered

punctures; superior interocular line nearly half as long as the inferior and subequal with the second, third, and fourth antennal joints; antennae filiform, the third joint one-fourth shorter than the fourth; mesoscutum punctured similar to the vertex; dorsal aspect of the propodeum coarsely coriaceous, the sides finely striate, the posterior face more strongly striate; second abscissa of radius longer than first or third; pygidium sharply narrowing, the carinae almost obsolete, length and basal (base of carinae) width subequal. Black; first two and last tergites piceous; wings dusky hyaline; pubescence sparse and silvery.

Type-locality.—Tahoe, Eldorado County, California. Described from two females collected at an altitude of 6,200 feet June, 1909, by W. M. Giffard.

Type.—Cat. No. 19950, U.S.N.M.

Paratype in Mr. Giffard's collection.

TRYPOXYLON FRIGIDUM Smith.

One male from Piedmont or Oakland, California, collected October, 1910.

TRYPOXYLON ARIZONENSE Fox.

One female collected by Blaisdell, in Calaveras County, California, July, 1910.

CERATOPHORUS TENAX (Fox).

Two females and four males from Piedmont and Oakland, California, collected September, 1910. Four females and six males from Alameda County, California, collected July, 1907.

PEMPHREDON NEARCTICUS Kohl.

A single female from Tahoe, Eldorado County. June, 1909, elevation 6,200 feet.

CEMONUS GIFFARDI, new species.

In Fox's table¹ this species will run to *tenax*, but the clypeus and propodeum readily separate the two species.

Female.—Length, 7.5 mm. Anterior margin of the clypeus with a broad median projection, the apex of which is shallowly arcuately bемarginate, so there are three small teeth; front rather sparsely punctured with a tendency to striato-punctuation above the antennae; vertex and posterior orbits shining, sparsely punctured; antennae nearly filiform, the third joint slightly longer than the fourth; mesoscutum and scutellum polished with a very few distinct punctures; mesepisternum coarsely coriaceous to striate; sides of the propodeum striato-reticulate, dorsad-ventrad; dorsal aspect

¹Trans. Amer. Ent. Soc., vol. 19, 1892, p. 308.

of propodeum with distinct carinae basally, which become so reduced posteriorly that there is a semicircular nearly unsculptured area; posterior aspects of propodeum punctato-striate; petiole convex above, coarsely sculptured slightly longer than hind coxa and femora or dilated part of first tergite; gaster polished; nervulus slightly antefurcal; second recurrent slightly antefurcal; second cubital narrowed by a fifth below. Black sparsely clothed with long white hair; wings hyaline, dusky apically; ventation dark brown.

Type-locality.—Alameda County, California. Described from one female collected July, 1907, by W. M. Giffard.

Type.—Cat. No. 20129, U.S.N.M.

STIGMUS FULVIPES FULVIPES Fox.

One female and four males from the foothills near Santa Barbara, June, 1907.

STIGMUS FULVIPES COQUILLETII Rohwer.

One female from Alameda County, California, collected July, 1907.

DIPLECTRON BIDENTATUS Ashmead.

One male from Alameda County, collected July, 1907.

This differs from Ashmead's type, which is a male (not female), in that the white mark on the side of the face is larger and the scape is pale beneath. This is new to California.

SILAON AFFINIS (Rohwer).

One female from Alameda County, collected July, 1907.

This is slightly smaller than the type, the mandibles are ferruginous, and the anterior tibiae have a pale spot exteriorly.

SILAON MAJOR, new species.

May be readily separated from the other American species of this genus by its large size, dark legs, and by the striation of the propodeum.

Female.—Length, 10 mm. Anterior margin of the clypeus obtusely, triangularly produced and with eight or nine strong, short spines; frontal carina strong, extending from the apex of the clypeus dividing a short distance above the antennae becoming subparallel and then sharply diverging to the inner margins of the eyes which it approximates and parallels from the anterior ocellus to the line drawn tangent to the posterior ocelli; head opaque, with fine, close punctures; ocelli in acute triangle; the ocellocular line sub-

equal with the diameter of a lateral ocellus; vertex and posterior orbits more sparsely punctured than the front; antennae tapering apically, the third joint one-fifth longer than the fourth; fourth and fifth subequal; distance between the eyes at the vertex slightly greater than the length of the second and third antennal joints: mesoscutum with distinct, well-defined punctures which become confluent laterally; scutellum similarly punctured; mesepisternum coarsely granular; dorsal aspect of the propodeum with oblique striae except in the apical middle where the striae are transverse, and there is a median longitudinal carina; sides of the propodeum strongly, irregularly longitudinally striate; posterior face truncate, transversely striate; nervulus slightly beyond the basal; second cubital receiving both recurrent veins at a distance from the transverse cubiti subequal with the length of the petiole of the second cubital; legs hardly spined, longer calcarium of the posterior tibia half as long as the posterior basitarsus; pygidial area with small, separate, well-defined punctures. Black; abdomen rufous; apical joints of the tarsi rufo-piceous; wings hyaline with the apical margin dusky; venation dark brown; head and thorax with dense, silvery pile; apical margin of the first four tergites with dense, silvery pile.

Type-locality.—North Yakima, Washington. Described from one female collected July 14, 1903, by Eldred Jenne.

Type.—Cat. No. 18998, U.S.N.M.

Male.—What is probably the male of this species was collected in Alameda County, California, July, 1907, by W. M. Giffard. It agrees very well in the above description of the female, but the following characters may be added: Length, 6 mm. Clypeus carinate, produced into a truncate lobe which is again produced into a low, rounded lobe; antennae distinctly tapering, the joints short, the third about one-fifth longer than fourth.

This male is not considered part of the type material.

HOPLISUS HAMATUS (Handlirsch).

One male from Tahoe, Eldorado County, collected June, 1909, at an altitude of 6,200 feet.

HOPLISUS ATRIFRONS (Fox).

Three males from Tahoe, Eldorado County, California, 6,200 feet, June, 1909.

DIENOPUS HOWARDII (Ashmead).

One male from Summit, Placer County, California, July, 1907.

NYSSON RUSTICUS Cresson.

One female from Tahoe, Eldorado County, collected June, 1909, at an altitude of 6,200 feet.

NYSSON (*BRACHYSTEGUS*) *PACIFICUS*, new species.

In Fox's table ¹ falls next to *punilus* (Cresson), but that species has the mesoscutum finely punctured and is otherwise different. In Cresson's table ² falls in with *compactus* Cresson, but that species has, according to Fox, quite different venation.

Male.—Length, 5 mm. Anterior margin of the clypeus depressed, broadly rounded, the basal portion convex with a few shallow punctures; eyes one-third closer together at the clypeus than at the vertex; front with close fine punctures and in addition larger and deeper punctures in the middle; postocellar line subequal with the ocellocular; interocellar area not raised or tuberculate; flagellum thickening apically, the apical joint subequal in length with the two preceding, obliquely truncate; pronotum rounded; mesoscutum bipunctate, the larger punctures close and sometimes partly confluent; punctures of the scutellum largely confluent; dorsal aspect of propodeum with about 10 longitudinal carinae; spines prominent, acute; legs normal; nervulus postfurcal by more than half its length; nervellus ante-furcal by its length; abdomen very finely granular and in addition with distinct separate punctures. Black; first tergite except median apical spot ferruginous; median spot on pronotum, tubercles, lateral spots on first fourth tergites (larger on first), yellowish-white; mandibles and anterior tibiae and tarsi piceous. Clothed with the usual silvery pile which is especially dense on the lateral dorsal aspect of the propodeum; wings dusky hyaline; venation brown.

Type-locality.—Foothills near Santa Barbara, California. Described from one male collected August, 1907, by W. M. Giffard.

Type.—Cat. No. 20162, U.S.N.M.

Family BEMBICIDAE.

STENIOLA DUPLICATA Provancher.

One female collected by A. Koebele at Tucson, Arizona, June, 1900.

BEMBIX SPINOLAE Lepeletier.

One female from Ohio or Texas.

SPHECIUS SPECIOSUS Drury.

One female from Ohio or Texas.

Superfamily APOIDEA.

XYLOCOPA ORPIFEX Smith.

A male and female from Calaveras County, collected by Blaisdell, July, 1910.

¹ Journ. N. Y. Ent. Soc., vol. 4, 1896, p. 12.

² Trans. Amer. Ent. Soc., vol. 9, 1882, p. 273.